**Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-34 (canceled).

35. (currently amended) A method for cutting of items into portions of predetermined size, said method comprising the steps of:

- placing the items on a conveying means;
- transporting the items to a measuring means;
- transporting the items from the measuring means to a cutting means on the conveying means;
- measuring at least one characteristic of each item with the measuring means;
- sectioning the items by the cutting means; and
- controlling and regulating at least one cutting process parameter in order to achieve predetermined product portions from the items based on the measured at least one ~~measured item~~ characteristic;

wherein

said items are placed consecutively and substantially abutting each other on said conveying means such that said items are in direct physical contact with each other, and wherein

the controlling step includes an item boundary detection step, such that a point of transition between

consecutive items on the conveyor means is determined based on the at least one measured item characteristic, and further wherein

the item boundary detection step includes the steps of:

receiving successive item data sets from the at least one measured item characteristic,

comparing a prior data set with a subsequent data set to determine a difference between at least two successive data sets, and

analyzing said difference between said at least two successive data sets ~~the received data~~ for identifying the ~~boundaries~~ boundary between the consecutively abutting items.

Claims 36-37 (cancelled).

38. (currently amended) The method according to claim 35, wherein said at least one characteristic includes a distance of a point on the surface of each one of said items from a reference point, and wherein the item boundary detection step includes the steps of:

- ~~receiving successive item data sets from the at least one measured item characteristic;~~

- determining said difference by calculating summary differences between said distances provided in two successive data sets, said summary differences being the sum of the differences between a first of the successive data sets and a second of the successive data sets; and

- identifying any of the summary differences that exceed a predetermined threshold, said identified summary differences representing a location of one point of the transition between two items.

39. (cancelled)

40. (withdrawn) The method according to claim 38, wherein the controlling step utilizes the summary difference, the summary difference being obtained from distance data from a plurality sensors in the measuring means according to:

$$\Sigma\Delta = |\Delta 1/a| + |\Delta 2/a| + |\Delta 3/a| + \ldots + |\Delta n/a|,$$

where $\Sigma\Delta$ is the summary difference, $\Delta 1$ is the difference between a first distance data and a successive second distance data from the first sensor in the measuring means, 'n' is the number of sensors, and 'a' is the length between the location of the first set of distance data and the location of the second set of distance data.

41. (previously presented) The method according to claim 35, wherein the measuring means includes a scanning device.

42. (previously presented) The method of claim 41, wherein the scanning device includes a ring scanner.

43. (previously presented) The method according to claim 35, wherein the measuring means include a scanning device, and wherein at least one light source is arranged to emit at least one line of light towards the item(s)

being scanned and the reflected light is detected by a sensor means arranged at an acute angle between the emitted and the reflected light beams.

44. (previously presented) The method according to claim 43, wherein the angle is about 30°.

Claims 45-47 (cancelled).

48. (withdrawn) The method according to claim 43, wherein the controlling step includes the step of organizing the measurements for defining at least one list of item characteristics representing a line characteristic along the items on the conveyor and calculating the summary difference between two data sets in said list, with the summary difference being obtained by:

$$\Sigma\Delta = |\Delta 1/a| + |\Delta 2/a| + |\Delta 3/a| + \ldots + |\Delta n/a|,$$

where $\Sigma\Delta$ is the summary difference, $\Delta 1$ is the difference between a first data set and a successive second data set in the item characteristics, 'n' is the number of data sets, and 'a' is the length between the location of the first data set and the location of the second data set.

49. (previously presented) The method according to claim 35, wherein the at least one measured item characteristic is the height of the items.

50. (previously presented) The method according to claim 35, wherein the items are aligned with the longitudinal direction of the substantially abutting items.

51. (previously presented) The method according to claim 35, wherein the items are mutually displaced relative to the longitudinal direction of the substantially abutting items.

52. (previously presented) The method according to claim 35, wherein the conveying means includes a V-shaped conveyor.

53. (previously presented) The method according to claim 35, further comprising the step of weighing the items before the measuring.

54. (previously presented) The method according to claim 35, wherein a transition marker between items is inserted.

55. (cancelled)

56. (currently amended) An apparatus for portion cutting of items, said apparatus comprising

conveying means for transporting items placed on said conveying means to measuring means for detecting at least one characteristic of the product, and onwards to cutting means for sectioning the items into portions; and

control means for controlling and regulating at least one cutting process parameter in order to achieve predetermined item portions based on the measured ~~item~~ at least one characteristic[[s]];

wherein

said items are placed consecutively and essentially abutting each other on said conveying means such that said items are in direct physical contact with each other, and wherein

the control means includes item boundary detection means for determining the point of transition between two items based on said at least one measured item characteristic, and wherein

the item boundary detection means includes:

means for receiving successive item data sets from the at least one measured item characteristic; and

means for analyzing the received data by comparing a prior data set with a subsequent data set to determine a difference between successive data sets for identifying the boundaries between the consecutively abutting items.

Claims 57-58 (cancelled).

59. (currently amended) The apparatus according to claim 56, wherein the control means include item boundary detection means, and wherein said at least one characteristic includes a distance of at least one point on the surface of each one of said items from a reference point, and wherein

- successive product data sets are provided from the at least one detected item characteristic,

- the summary differences between two successive data set are calculated as being the sum of the differences between the distance(s) of a first data set and the distance(s) of a second data set, and
- at least one point of transition between two items is located by identifying the calculated summary differences exceeding a predetermined threshold.

Claim 60 (cancelled).

61. (withdrawn) An apparatus according to claim 59, wherein the control means are provided with the summary difference between two data sets, comprising distance data from a plurality of sensors in the measuring means by

$$\Sigma\Delta = |\Delta 1/a| + |\Delta 2/a| + |\Delta 3/a| + \ldots + |\Delta n/a|,$$

where $\Sigma\Delta$ is the summary difference, $\Delta l$ is the difference between a first distance data and a successive second distance data from a first sensor in the measuring means, 'n' is the number of sensors and 'a' is the length between the location of the first set of distance data and the location of the second set of distance data.

Claim 62 (cancelled).

63. (previously presented) The apparatus according to claim 56, wherein the measuring means include a ring scanner.

64. (previously presented) The apparatus according to claim 56, wherein the measuring means include a scanning

device, wherein at least one light source is arranged to emit at least one line of light towards the item and the reflected light is detected by sensor means arranged at an acute angle between the emitted and the sensor position.

65. (previously presented) The apparatus according to claim 64, wherein the angle is about 30°.

Claims 66-68 (cancelled).

69. (withdrawn) The apparatus according to claim 64, wherein the control means include means for organizing measurements for defining at least one list of item characteristics representing a line characteristic along the items on the conveyor and calculating a summary difference between two data sets in the list, said summary difference being obtained by:

$$\Sigma\Delta = |\Delta 1/a| + |\Delta 2/a| + |\Delta 3/a| + \ldots + |\Delta n/a|,$$

where $\Sigma\Delta$ is the summary difference, $\Delta 1$ is the difference between a first data set and a successive second data set in the item characteristics, 'n' is the number of data sets, and 'a' is the length between the location of the first data set and the location of the second data set.

70. (previously presented) The apparatus according to claim 56, where the conveying means includes a V-shaped conveyor.

71. (previously presented) The apparatus according to claim 56, wherein the apparatus includes weighing means for weighing the items.

72. (previously presented) The apparatus according to claim 56, wherein the apparatus includes means for inserting a transition marker between the items.

73. (previously presented) The method according to claim 35, wherein the item data sets are data sets measured practically across the item transversely to the transportation direction.

74. (previously presented) The method according to claim 73, wherein the item data sets measured practically across the item transversely to the transportation direction are organized in lists representing item characteristics practically longitudinally to the transportation direction.

75. (previously presented) The method according to claim 74, wherein the summary differences between two data sets, comprising data from one or more lists, are obtained by:

$$\Sigma\Delta = |\Delta 1| + |\Delta 2| + |\Delta 3| + \ldots + |\Delta n|,$$

where $\Sigma\Delta$ is the summary difference, $\Delta 1$ is a difference between a first data set and a successive second data set in the item characteristics, and 'n' is a number of data sets.

76. (previously presented) The method according to claim 35, wherein the data sets comprise distances in relation to a reference point, said distances being measured by means of one or more sensors located at fixed positions.

77. (previously presented) The method according to claim 35, wherein the data sets comprise colors measured by one or more sensors.

78. (previously presented) The method according to claim 35, wherein the data sets comprise textures measured by one or more sensors.

79. (previously presented) The apparatus according to claim 56, wherein the item data sets are data sets measured practically across the item transversely to the transportation direction.

80. (previously presented) The apparatus according to claim 79, wherein the item data sets are data measured practically across the item transversely to the transportation direction are organized in lists representing item characteristics practically longitudinally to the transportation direction.

81. (previously presented) The apparatus according to claim 80, wherein the control means are provided with the summary difference between two data sets, comprising data from one or more lists, according to:

$$\Sigma\Delta = |\Delta 1| + |\Delta 2| + |\Delta 3| + \ldots + |\Delta n|,$$

where $\Sigma\Delta$ is the summary difference, $\Delta l$ is a difference between a first distance data and a successive second distance data from a sensor in the measuring means, and 'n' is the number of sensors in the measuring means.

82. (previously presented) The apparatus according to

claim 56, wherein the measuring means for detecting at least one characteristic of the product comprises one or more sensors located at fixed positions for providing data sets representing distances in relation to a reference point.

83. (previously presented) The apparatus according to claim 56, wherein the measuring means for detecting at least one characteristic of the product comprises one or more sensors for detecting surface color.

84. (previously presented) The apparatus according to claim 56, wherein the measuring means for detecting at least one characteristic of the product comprises one or more sensors for detecting texture.

85. (previously presented) The apparatus according to claim 56, wherein the at least one measured item characteristic is the height of the items.

86. (currently amended) A method for cutting of items into portions of predetermined size, said method comprising the steps of:

- placing the items on a conveying means in a manner such that a subsequently placed item is placed on said conveying means next to a previously placed item without a gap between the previously placed item and the subsequently placed item;
- transporting the items to a measuring means;
- transporting the items from the measuring means to a cutting means on the conveying means;

- measuring at least one characteristic of each item with the measuring means;

- sectioning the items by the cutting means; and

- controlling and regulating at least one cutting process parameter in order to achieve predetermined product portions from the items based on the at least one measured item characteristic, wherein the controlling step includes an item boundary detection step such that a point of transition between consecutive items on the conveyor means having no gap therebetween is determined based on comparing a difference of the measured at least one ~~measured item~~ characteristic of the previously placed item with the measured at least one characteristic of the subsequently placed item.

87. (currently amended) The method of claim 86, wherein the item boundary detection step includes the steps of:

receiving successive item data sets ~~from~~ of the measured at least one ~~measured item~~ characteristic of successive items, and

analyzing the received data for identifying the boundaries between the consecutively placed items.

88. (currently amended) The method according to claim 86, wherein the item boundary detection step includes the steps of:

- receiving successive item data sets of ~~from~~ the at least one measured item characteristic of successive items;

- calculating summary differences between two successive data sets, said summary differences being the sum of the differences between a first of the successive data sets and a second of the successive data sets; and
- identifying any of the summary differences that exceed a predetermined threshold, said identified summary differences representing a location of one point of the transition between two items.

89. (previously presented) The method according to claim 86, wherein a transition marker is inserted between items prior to said item boundary detection step to support said item boundary detection step.

90. (new) A method for cutting of items into portions of predetermined size, said method comprising the steps of:

- placing the items on a conveying means in a manner such that a subsequently placed item is placed on said conveying means next to, and in contact with, a previously placed item for transport to a cutting means to form a boundary;
- for each item, measuring a distance of a plurality of spaced points on a surface of said item with at least one reference point to form a data set of distances corresponding with the item;
- determining differences between the distances provided in the data set corresponding to the previously placed item and the data set corresponding to the subsequently placed item;

- determining the boundary between the previously placed item and the subsequently placed item by analyzing said differences; and
- sectioning the items by the cutting means for cutting said items, wherein said determined boundary is taken into account for said cutting.

91. (new) The method according to claim 90, wherein the differences between subsequent data sets are calculated by determining a summary difference according to:

$$\Sigma\Delta = |\Delta 1| + |\Delta 2| + |\Delta 3| + \ldots + |\Delta n|,$$

where $\Sigma\Delta$ is the summary difference, $\Delta 1$ is a difference between first distance data in a first data set and a second distance data of a subsequent data set, and 'n' is the number of points of said plurality of spaced points.

92. (new) The method according to claim 90, wherein the difference between the data sets is calculated by determining a summary difference according to:

$$\Sigma\Delta = |\Delta 1/a| + |\Delta 2/a| + |\Delta 3/a| + \ldots + |\Delta n/a|,$$

where $\Sigma\Delta$ is the summary difference, $\Delta 1$ is a difference between first distance data in a first data set and a second distance data of a subsequent data set, 'n' is the number of points of said plurality of spaced points, and 'a' is a length between the location of the first data set and the location of the second data set.